CASE REPORT

Thromboembolic disease and testicular germ cell tumors

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Abstract: Testicular germ cell tumors occur rarely, but they are the most common solid tumors among young men. The combination of chemotherapy (bleomycin, etoposid, cisplatin) with surgery remains the mainstay of the treatment. The increased risk of thromboembolic events are well known in patients with cancer. This case report describes a 49-year-old man with pulmonary embolism diagnosed ten weeks after the beginning of chemotherapy (Ref. 16). Full Text (Free, PDF) www.bmj.sk.

Key words: testicular tumors, thromboembolic disease.

Germ cell tumors of testis (GCT) occur rarely, they make 1% of all malignant tumors, but they are the most common type of cancer of young men between the ages of 15–35 years. Bray et al (1) indicated an evident rise of incidence of GCT between 3–15/100,000, in the majority of European countries. GCT has become a “model” of chemosensitive and curable neoplasm. The multimodality therapy which includes cisplatin-based chemotherapy and surgery in the first-line treatment of GCT, has resulted in the cure rates of approximately 80% in disseminated cases and more than 98% in localized disease inside the testis (2, 3, 4). The aim of the clinical trials was to reduce the amount of early and late toxicity caused by chemotherapy. Late complications include secondary malignancies, bleomycin-induced pulmonary fibrosis, Raynaud’s phenomenon, peripheral neurotoxicity, infertility (5), and increased cardiovascular complications (6).

The increased risk of thromboembolic events (TEE) in cancer patients is well known. The first mention of this complication dates back to the 19th century (7). TEE is the major complication of cancer, occurring in 4–20% of patients, and is one of the leading causes of death in patients with cancer (8). Patients with an active chemotherapy have 6.5 times increased risk of TEE (9). The other risk factors include the first 3–6 months after diagnosis, metastatic disease, hospitalization with secondary immobilization, recent major surgery, active hormonal therapy, presence of central venous catheters, also venostasis due to tumor-mediated vascular compression, sepsis, age as well as obesity (10).

The occurrence of the acute TEE in population of young men receiving chemotherapy for GCT has evoked a necessity to indentify the risk factors in these patients with curable neoplasm and life-threatening complication (11).

In this study we describe a case of a 49-year-old man with pulmonary embolism diagnosed 10 weeks after the beginning of chemotherapy.

Case report

A 49-year-old man underwent the right orchiectomy with pathological finding of embryonal carcinoma pT2, in May 2008. Computed tomography (CT) scan of the abdomen and chest showed a retroperitoneal lymadenopathy of 17 mm, baseline postcholecystectomy markers were within the normal range (α-fetoprotein (AFP) 4.9 IU/ml/N<15 IU/ml, human chorionic gonadotropin (HCG) <2 mIU/ml/N<10 mIU/ml), lactate dehydrogenase (LDH) 7.22 ukat/l /N 4.40–8.30 ukat/l). The tumor was classified as pT2N1M0SO – stage IIA. In the time of initiation of the treatment, patient had a body surface area of 1.96 m².

From June to August 2008, the patient underwent three cycles of BEP (bleomycin 30 mg i.v. d 1, 8, 15, etoposide 200 mg i.v. d 1–5, cisplatin 40 mg i.v. d 1–5). On the 15th day of the third cycle of bleomycin chemotherapy, patient complained about weakness, three days persisting subfebrilities (more than 37.5 °C), perspiration, tiredness and pain of the right hemithorax and dyspnoea on exertion. Following physical examinations showed: B.P. 105/70 mmHg, heart rate 110/min and crepitations in right basal side of thorax. An incipient right side pneumonia was described by chest x-ray, anemia and neutropenia G IV were present in the blood count. Regarding this state, the symptomatic basal treatment including transfusion, growing factor and antibiotics were aplied and bleomycin chemotherapy was stopped. Two weeks later, the patient had a CT scan control of the chest and abdomen after three cycles of chemotherapy. Retroperitoneum was within any detection of augmented lymph-nodes. However, pulmonary embolism was detected in the right arm of pulmonary artery (PA) and its branches and to segmental branch S8 on the left side with a development of pulmonary infarction. The treatment with full dose of low-molecular-weight heparin was started. Two months later, the control CT scan showed a partial regression of pulmo-
nary embolism into PA. Three months later a complete regression of the defect in PA was noticed. The patient’s last CT scan of the abdomen was taken in May 2009 and was without any evidence of the disease. The patient is in the complete remission and still in observation.

Discussion and conclusion

The incidence of TEE occurring in GCT patients was already described as case reports in recent literature by different groups of authors (12–14). In the British series of 333 patients with an advanced GCT, the incidence of vena cava compression was 9.3 %, of whom 29 % had a thrombo-embolic complication and one patient died of pulmonary embolism (15). Weijl et al (16) reported 15 TEE (8 % of the studying group of patients), included 13 venous events and two arterial events. Liver metastases and high doses of steroids used as antiemetics were independent predictors of TEE, but these factors were not tested in a separate set of GCT patients.

Piketti et al (11) showed that patients with GCT who received cisplatin-based chemotherapy are at significantly higher risk of having thrombosis in the subsequent 6 months compared to those with other cancers who received similar treatments. Moreover, these authors showed that the risk of having thrombosis could be predicted in GCT patients using two simple factors: a) high body surface area (>1.9 m²), and b) elevated serum LDH before the chemotherapy. Patients with no risk factors had a 4 % risk of thrombosis, while those with at least one risk factor had a 26 %. In the validation set of patients with GCT treated in Lyon (77 patients), patients with no risk factors had a 0 % risk of thrombosis, while those with at least one factor had a risk of 17 %. Based on this study, the authors recommend in GCT patients with either high body surface area, high serum LDH, or both; a thromboprophylaxis during the whole treatment starting from day one. However, the other studies are necessary to evaluate the impact of this modality.

This case report of a 49-year-old man shows, that we should consider thromboprophylaxis in GCT patients with risk factors, regarding to the fact that it’s a life-threatening complication which is many times very difficult to diagnose.

References


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